



PATENT  
Attorney Docket No.: SAM-0201

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Jong-hyon Ahn

Serial No.: 09/879,556

Filing Date: June 12, 2001

Title: METAL INTERCONNECT LAYER OF SEMICONDUCTOR DEVICE AND  
METHOD FOR FORMING A METAL INTERCONNECT LAYER

Examiner: Hu, Shouxiang

Group Art Unit: 2811

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8

I hereby certify that this correspondence is being deposited with the United States Post Office as First Class Mail on the date indicated below in an envelope addressed to Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

May 19, 2003  
Date

Lisa Sanders  
Lisa Sanders

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

AMENDMENT TRANSMITTAL

Sir:

1. Transmitted herewith is an amendment for this application.

STATUS

2. Applicant is

- ☐ a small entity. A verified statement:  
☐ is attached.  
☐ was already filed.  
☒ other than small entity.

EXTENSION OF TERM

3. The proceedings herein are for a patent application and the provisions of 37 CFR 1.136 apply.

- (a) ☐ Applicant petitions for an extension of time under 37 CFR 1.136

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| Extension<br>(months)                 | Fee for other than<br><u>small entity</u> | Fee for<br><u>small entity</u> |
|---------------------------------------|---|--------------------------------|
| <input type="checkbox"/> one month    | \$110.00                                  | \$55.00                        |
| <input type="checkbox"/> two months   | \$410.00                                  | \$205.00                       |
| <input type="checkbox"/> three months | \$930.00                                  | \$465.00                       |
| <input type="checkbox"/> four months  | \$1,450.00                                | \$725.00                       |

Fee \$ \_\_\_\_\_

If an additional extension of time is required, please consider this a petition therefor.

☐ An extension for \_\_\_\_\_ months has already been secured and the fee paid therefor of \$ \_\_\_\_\_ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$ \_\_\_\_\_

OR

(b) ☐ Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

#### FEE FOR CLAIMS

4. The fee for claims (37 CFR 1.16(b)-(d)) has been calculated as shown below:

| CLAIMS AS AMENDED  |  |       |   |                            |        |     |
|--|--|-------|---|----------------------------|--------|-----|
|  | (1)                                    |       | (2)   | (3)                        |        |     |
|  | CLAIMS REMAINING<br>AFTER<br>AMENDMENT |       | HIGHEST<br>NUMBER<br>PREVIOUSLY<br>PAID FOR | PRESENT<br>NUMBER<br>EXTRA | RATE   | FEE |
| TOTAL CLAIMS   | 42                                     | minus | 42  | 0                          | x \$18 | \$0 |
| INDEPENDENT CLAIMS   | 6                                      | minus | 6   | 0                          | x \$84 | \$0 |
| MULTIPLE DEPENDENT CLAIM<br>ADDED  | No                                     |       |   |                            | \$280  |     |
|  |  |       |   | TOTAL                      |        | \$0 |
| If applicant has small entity status under 37 CFR 1.9 and 1.27,<br>then divide total fee by 2 and enter amount here. |  |       |   | SMALL ENTITY<br>TOTAL      |        |     |
|  |  |       |   |                            |        |     |

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(c) ☒ No additional fee for claims is required.

OR

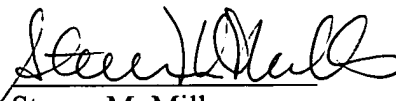
(d) ☐ Total additional fee for claims required \$ \_\_\_\_\_

FEE PAYMENT

5. ☐ Attached is a check in the sum of \$ \_\_\_\_\_  
☐ Charge Deposit Account No. \_\_\_\_\_ the sum of \$ \_\_\_\_\_.  
A duplicate of this transmittal is attached.

Respectfully submitted,

Date: May 19, 2003  
Mills & Ondrlo LLP  
Eleven Beacon Street, Suite 605  
Boston, MA 02108  
Telephone: (617) 994-4900  
Facsimile: (617) 742-7774

  
Steven M. Mills  
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Attorney for Applicant

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Commissioner for Patents  
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Alexandria, Virginia 22313-1450

TRANSMITTAL LETTER

Sir:

Enclosed herewith for filing in the above-identified patent application please find the following listed items:

1. Amendment Transmittal;
2. Amendment after Final in response to Office Action mailed on March 19, 2003; and
3. Return Postcard.

In connection with the foregoing matter, please charge any additional fees which may be due, or credit any overpayment, to Deposit Account Number 50-1798. A duplicate copy of this letter is provided for this purpose.

Respectfully submitted,

Date: May 19, 2003  
Mills & Onejlo LLP  
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Steven M. Mills  
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AMENDMENT AFTER FINAL REJECTION

Sir:

This is in response to the final Office Action mailed on March 19, 2003. It is requested that the following amendments be entered and that the following remarks be considered.

Please amend the application as follows:

In the Claims

Please amend the claims as follows:

1. (Twice Amended) A metal interconnect structure for a semiconductor device, comprising:  
a trench formed in an interlevel dielectric (ILD) film, the trench having sidewalls in the ILD film which are formed to define two cross-sectional portions of the trench, a lower portion of the trench having sidewalls which define a first cross-sectional width of

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